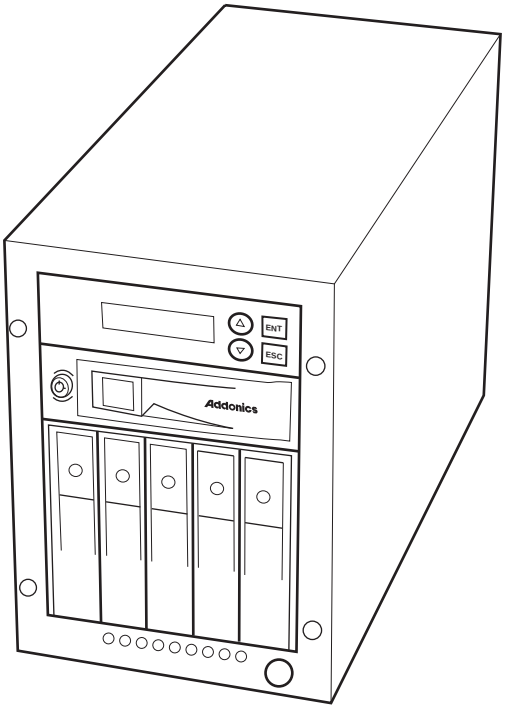
Addonics
TECHNOLOGIES



User Guide

1:5 HDD Duplicator Deluxe C

(HDUS5SNDX)

www.addonics.com

v3.1.11

Technical Support

If you need any assistance to get your unit functioning properly, please have your product information ready and contact Addonics Technical Support at:

Hours: 8:30 am - 6:00 pm PST
Phone: 408-453-6212
Email: http://www.addonics.com/support/query/

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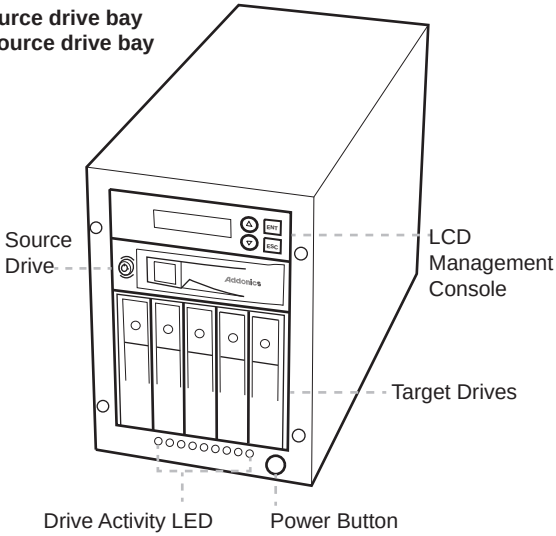
Basic Instructions

Source drive bay (Top)

Slide the source hard drive into the source drive bay and make sure to lock the drive bay (source drive bay won't power on unless it's locked)



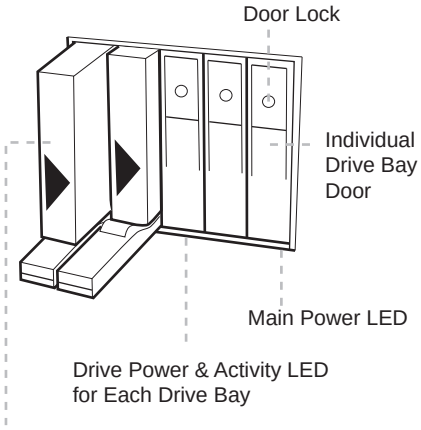
Target drive bays (Bottom 5)

1. Be sure the lock on each drive door is in an unlock position. If not, use the key that comes with the Disk Array to unlock the drive door. Pull on the door lever to swing open the drive door all the way.

2. Slide a 3.5" SATA hard drive into the drive slot with the drive connector side facing in. Be sure to orient the hard drive correctly as shown in the yellow label on the inside of the drive door – with drive door swing open at the bottom, the top of the hard drive should face to the right. **The drive should slide all the way into the slot with very little resistance. Forcing the drive into the slot will cause drive damage or permanent damage to the Disk Array.**

3. Once the drive is all the way into the drive slot, close the door all the way till the drive door latch securely. This will engage power and data connection with the hard drive. The LED lit for the drive slot should lit if the Disk Array already powered on. You may lock the drive door with the key

4. To remove the hard drive from the Disk Array, simply follow the step 2 – 3 in reverse.



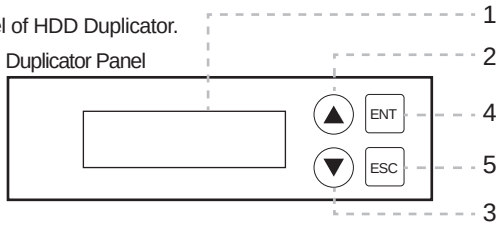
Insert Hard Drives with Top Facing Right

I. Connecting the Power Cable and Powering On

a. Connect the power cord provided from the wall outlet to the back of the tower.
b. Push the power button to turn on the HDD duplicator.

II. The Duplicator Panel

There are four buttons and an LCD on the panel of HDD Duplicator.
1 – LCD shows a function or a message.
2 – it is used to scroll up function menus.
3 – it is used to scroll down function menus.
4 – it is used to execute a function.
5 – it is used to cancel a function.



III. Duplicating a drive

When the duplicator powers on, it initializes and goes through the steps below

Shows the firmware version

HD Duplicator 1-1 Ver:

Initialize SDRAM's status..

Initialize SDRAM

Detect Drives' status.

Detect Drives

Shows the first function:

1.Copy HD

Copy HDD copies data directly from the source hard disk to the target hard disk.

Press ENT button to begin copy. The system will auto-detect the hard disks and show the following info on the LCD.

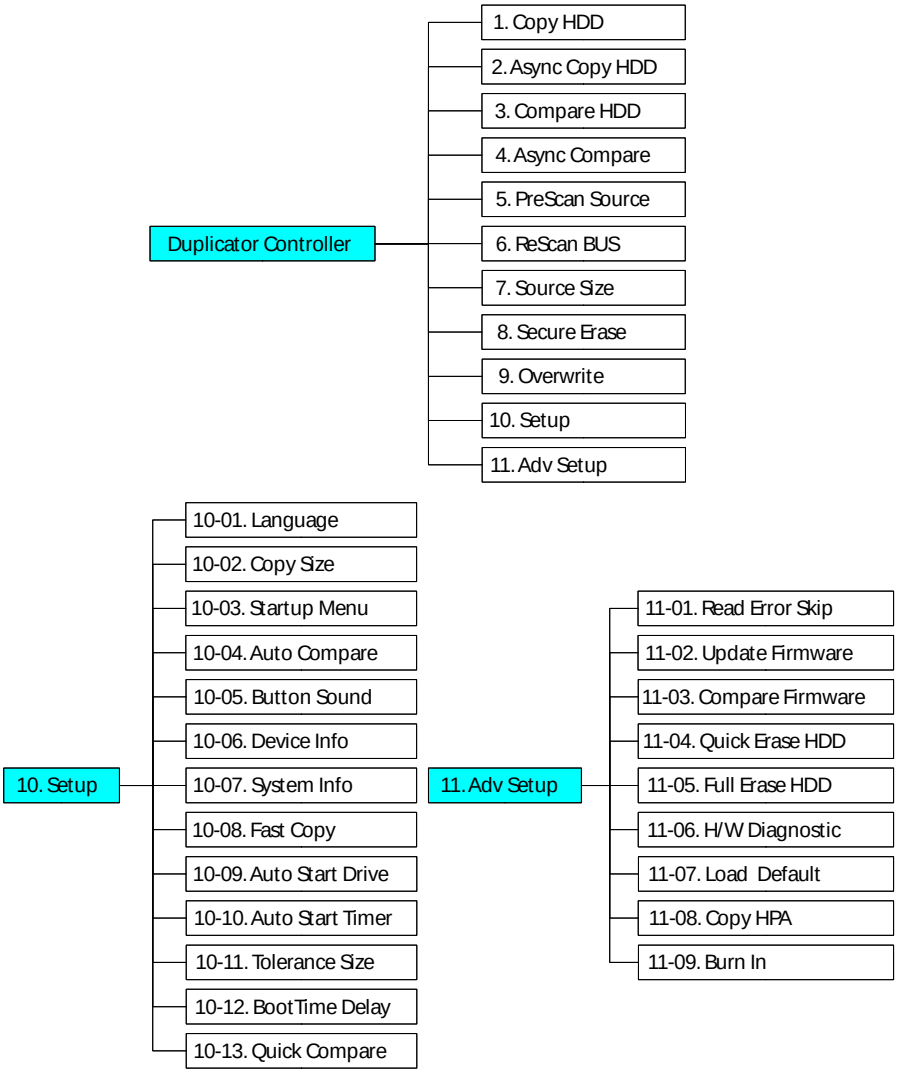
Copy-36MBs 0% 235.7GB 1:48

The LCD will show the following info during the copying process: remaining time, completed percentage. The copy speed, capacity and time will vary depending on the source hard disk. Once the copying process is complete the LCD will display the following results.

Copy HD OK:

Functions

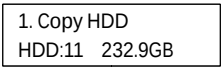
The copy controller has 11 functions in total, with the 11th (Adv Setup) being a hidden system function that only appears when the ESC key is pressed for 2 seconds until there is a beep. These are shown below.



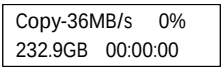
Copy HDD

Copy HDD copies data directly from the source hard disk to the target hard disk. Please make sure that the capacity of the target hard disk is equal or larger than the source hard disk.

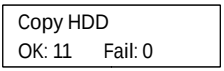
Choose option 1 from the menu:



Press **ENT** to begin copy. The system will auto-detect the hard disks and show the following copying info on the LCD.



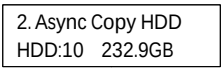
The LCD will show the following info during the copying process: elapsed time, completed percentage. The copy speed, capacity and time will vary depending on the source hard disk. Once the copying process is complete the LCD will display the following results.



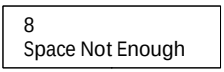
Async Copy HDD

This option is used to specify the size of the source for simplifying further copying operations.

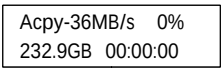
Choose option 2 from the menu:



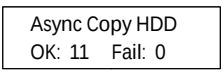
Press **ENT** . Before the start of the reproduction, if the console detects that a hard drive capacity is less than source, then the LCD will show the corresponding channel number.



And then automatically copies. The LCD will display the following info.



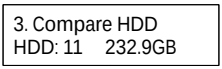
If the replication process to continue to add additional hard disk device, LCD will only show the last completed percentage.
Once the copying process is complete the LCD will display the following results.



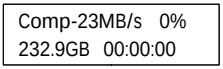
Compare

Compare HDD is used to see if the data on a source hard disk is identical to the target hard disk after the Copy HD operation.

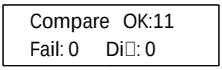
Choose option 3 from the menu:



Press **ENT** to begin the comparison. The LCD will display the following info.



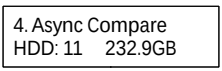
Once the comparison is complete the LCD will display the following info as well as the amount of data on the source hard disk.



Async Compare

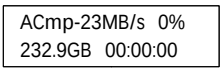
Compare HDD is used to see if the data on a source hard disk is identical to the target hard disk after the Copy HDD operation. While compare process is on-going, allows you to plug-in additional target drives and comparison will automatically start for the added target drive.

Choose option 4 from the menu:

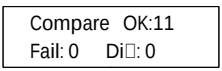


Press **ENT**

to begin the async comparison. The LCD will display the following info.



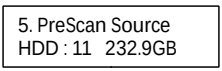
If the comparison process continues to add additional hard disk device, LCD will only show the last completed percentage.
Once the copying process is complete the LCD will display the following results.



PreScan Source

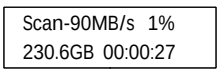
PreScan HDD is used to check if the source hard disk can be accessed properly. It also tests the read speed.

Choose option 5 from the menu:

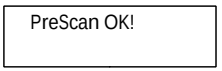


Press **ENT**

to begin scan. The LCD will display the following info



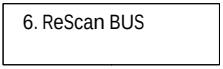
Once the scan is complete, the LCD will display the corresponding results



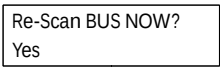
ReScan Bus

ReScan Bus allows swapping the source or target in and out without having to reboot the system.

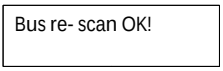
Choose option 6 from the menu:



Press **ENT** to re-scan hardware. The LCD will display the following info.

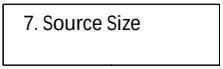


When the scan is complete the LCD will display the fol lowing info.



Source Size

Source Size is used to show the capacity of the source.
Choose option 7 from the menu:

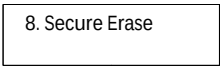


Press **ENT** and the LCD will show the following info.

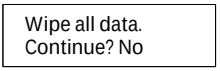
Then press **ENT** and the LCD will show the data's size info.

Secure Erase

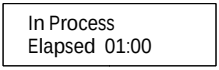
Secure Erase is used to wipe the data of the hard disk, it will erase all of HDD of duplicator (included Source HDD).
Choose option 8 from the menu:



Press **ENT** to access option. By default it is set to No. Use the Up and Down arrow keys to choose Yes.



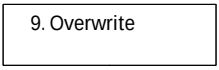
Press **ENT** and the LCD will show the following info.



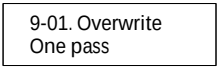
Overwrite

Overwrite is used to overwrite the data of the hard disk, it will erase all HDDs connected to the duplicator (including Source HDD). There are 3 sub-options: One pass,3 pass and 7 pass.

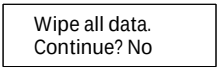
Choose option 9 from the menu:



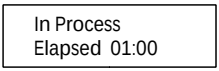
Press **ENT** to access option. By default it is One pass Use the Up and Down arrow keys to choose other options.



Press **ENT** to access option. By default it is set to No. Use the Up and Down arrow keys to choose Yes.



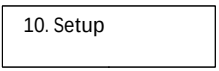
Press **ENT** and the LCD will show the following info.



Setup

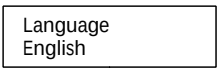
Setup allows various system settings to be changed. There are 12 sub-options: Language, Copy Size, Startup Menu, Auto Compare, Button Sound, Device Info, System Info, Fast Copy, Auto Start Drive, Auto Start Timer, Tolerance Size and Boot Time Delay.

Choose option 8 from the menu:



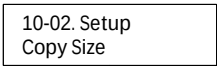
Language

This option is used to select the system's language sup port. By default this is set to English. Press **ENT** to change the Language settings.

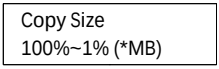


Copy Size

This option is used to specify the size of the source hard disk for simplifying further copying operations.



Press **ENT** and the LCD will display a detailed list of options as shown below



Use the Up and Down arrow keys to choose different copy sizes. The system will offer their corresponding percentages so the user can specify the amount to copy from the source hard disk. Press **ENT** to confirm and save the changes.

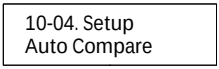
Startup Menu

This option allows you to set an option other than "Setup" to be displayed as the first available option on the menu every time you start the system.

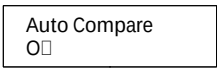
Press **ENT** then use the Up and Down arrow keys to choose other options. By default the first menu option is Copy HDD.

Auto Compare

This option automatically compares the source hard disk with the target hard disk after a copy operation is completed.

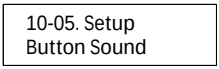


Press **ENT** to access option. By default it is set to Off. Use the Up and Down arrow keys to choose On.

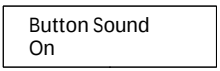


Button Sound

This option is used to control the sound of a button when you press it.

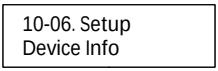


Press **ENT** and the LCD will display the following info. Use the Up and Down arrow keys to choose whether button sound is on or off.

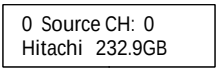


Device Info

This option is used to display the details of all hard disks connected to the copy controller.

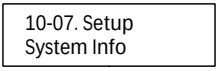


Press **ENT** and the LCD will display each hard disk' information in order as shown below.



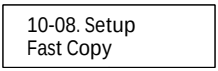
System Info

This option displays system information.

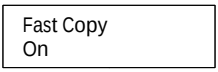


Fast Copy

This option displays Fast Copy. Fast Copy only copies data on the source drive to the target drives. Currently only supports FAT, FAT32, NTFS, HFS, Ext2 and Ext3 partitions.



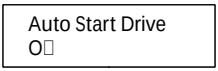
Press **ENT** and the LCD will display the following info. Use the Up and Down arrow keys to choose whether fast copy is on or o. (This function currently only e ective in FAT, FAT32, NTFS, HFS, Ext2 and Ext3 partitions.)



Auto Start Drive

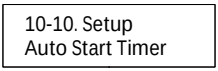
This option is used to display to copy automatically once y ou insert HDD on target port.

Press **ENT** to enter the following gure. The default is O . Use the Up and Down arrow keys to choose 1-11.



Auto Start Timer

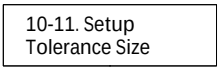
This option is used to set the period of time when the duplicator starts copying automatically once you insert HDD on target port. Default is set at OFF, use the arrows to choose time.



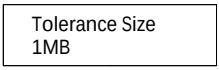
Press **ENT** to enter the following □gure. The default is O□. Use the Up and Down arrow keys to choose 5 Sec-50 Sec.

Tolerance Size

This option is used to set the tolerance in terms of percentage di□erence between the source and target capacity. This is to ensure that when the target drive is smaller than the source drive, the duplication process will not start.

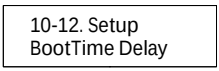


Press **ENT** to enter the following □gure. The default is O□. Use the Up and Down arrow keys to choose 1MB~100MB of source.

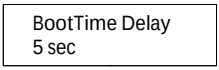


BootTime Delay

This option is used to to set boot delay time.

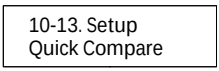


Press **ENT** to enter the following □gure. The default is 5 sec. Use the Up and Down arrow keys to choose 0~99 sec.

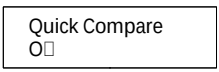


Quick Compare

This option is used to set the size of each comparison unit.

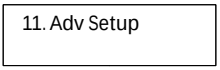


Press **ENT** to enter the following □gure. The default is O□. Use the Up and Down arrow keys to choose 1 Byte/1K/10K/100K/1MB/10MB/100 Mbytes. (In order to improve the accuracy of pure data can maintain the default settings.)



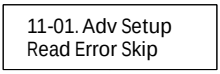
Adv Setup

Adv Setup o□ers expert users access to more advanced system settings.
To access this option, hold down the **ESC** key for two seconds until it appears.

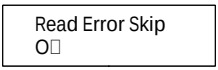


Read Error Skip

This function sets the system to ignore any errors during the copying process. Normally if there is an error during copying a warning is displayed on the LCD. By using this function, users can also copy a HDD with errors.



Press **ENT** to enter the following screen. By default this option is set to OFF. Use the up and down buttons to enable or disable this option.

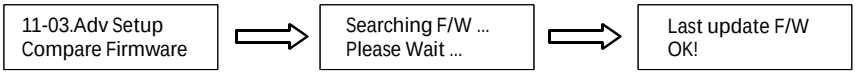


Update Firmware

This function is used to update the system's □rmware. Download the latest version of the □rmware from the Internet at www.addonics.com. For the complete instructions, visit the □rmware update webpage or view the instructions found later in this manual.

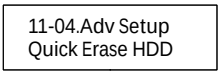
Compare Firmware

This function is used to compare the current system □rmware version with the new version the user is upgrading to. This ensures that the downloaded □rmware is the latest version. The message "Last update F/W" indicates that it is the latest version.

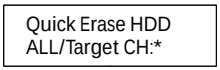


Quick Erase HDD

This function is used to quickly erase all data on the HDD . Please backup any important data before using this function.



Press **ENT** to enter the following screen. Use the Up and Down buttons to select the HDD to erase.



Press **ENT** again and the LCD will prompt you to con□rm the erase operation.

```
All data will be
lost,Erase? No
```

Full Erase HDD

This function is used to full erase all data on the HDD. Please backup any important data before using this function.

```
11-05.Adv Setup
Full Erase HDD
```

Press **ENT** to enter the following screen. Use the Up and Down buttons to select the HDD to erase.

```
Quick Erase HDD
ALL/Target CH:*
```

Press **ENT** again and the LCD will prompt you to con□rm the erase operation.

```
All data will be
lost,Erase? No
```

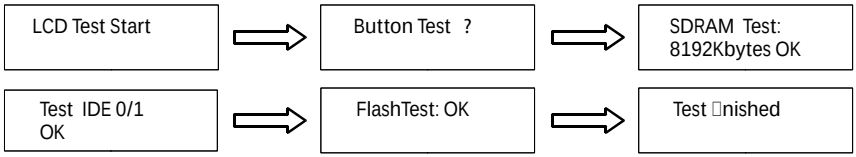
H/W Diagnostic

Press **ENT** to enter the following screen. This function is used to check that the system is operating normally.

```
11-06.Adv Setup
H/W Diagnostic
```

Press **ENT** again to enter the following screen. The LCD will cycle through the test categories as they are performed. The LCD display is tested □rst, the control panel is tested next (requires manual operation), then followed by the system's internal diagnostics, hardware connection test then the RAM and SD Flash test. All test results are shown on the LCD. This is a simple way to verify that the system is operating normally.

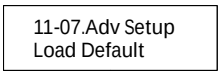
Press **ENT** and the system will begin the tests as shown below.



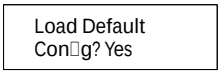
Once the system diagnostics have been completed the "Test finished" message will appear on the LCD.

Load Default

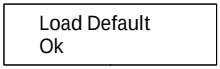
Press **ESC** to return to the main menu then use the **ENT** button to select. This function resets all settings to their factory default. This function helps the system recover from errors caused by an illegal operation.



Press **ENT** to enter the following screen. Use the Up and Down buttons to con□rm reset to factory defaults.

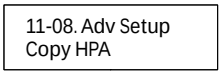


If Load Default OK, this will be displayed on the LCD as shown below.



Copy HPA

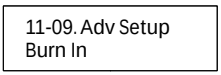
If this function is set to "ON", the system will completely copy the data in a source HDD's host protected area.



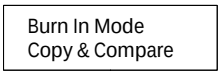
The default is "OFF". Use the **ENT** , Up and Down buttons to change this to "On".

Burn In

This function is used to burn test the system reliability.



Press **ENT** to enter the following screen.



Use the Up and Down buttons to choose Compare, Async Copy & Cmp and Async Compare, then press **ENT** to con□rm.

Basic Troubleshooting

LCD

If the LCD blank after the device is turned on, check that the power cable is properly connected and that the power supply is on.

Error Message

When the system is running a copy operation or hardware diagnostics, if the operation is manually terminated by pressing ESC an error message will be shown by the LCD. This may lead to an illegal operation and cause the device to stop reminding. If this happens, the device must be restarted.

Hard Disk

If unable to read the hard disk please check that the data and power cables are properly connected.

Keys

If pressing the keys on the front panel produces no response from the system, the keys may have malfunctioned. Please check the control panel to see if the wiring has come loose.

Firmware Upgrade

The device can be updated to new versions of firmware through CD/DVD-ROM. If unable to update the firmware, check that the firmware was downloaded correctly. A failed firmware upgrade may cause the duplicator to become inoperable. If the system is working normally, do not attempt this operation. If the system is already experiencing problems, please contact your distributor for repairs.

Startup/Shutdown

Do not suddenly turn off the power while the system is performing an operation. After shutting down normally, wait a moment (usually around 2 seconds) before starting the system again so it can run its self-diagnostics.

About Copy HPA

The HPA (Host Protected Area) is a hidden data region defined in ATA/ATAPI-4. This area is not usually accessible to software. The SATA HDD Duplicate Controller supports the copying of data from this hidden area.

Drive is locked (cannot be initialized after the SECURE ERASE or OVERWRITE)

1. Place drive in the source slot
2. Execute "PreScan" function for 1 minute
3. Press "ESC" key until you see "User Abort" on the LCD screen
4. Now remove the drive from the duplicator and connect it to your system, the HDD should be recognized and be able to initialize again

Error Messages List

NO#	Error Messages	Description	Applied to
1	Source Drive Not Exist!	No source HDD exist during operating	Copy, Async Copy, Compare, Async Compare, PreScan Source, Source Size, Copy Size, Tolerance Size
2	User Abort!	Cancel operating	Any function and any time
3	No Drive Exist	No HDD exist during operating	Device Info
4	X Space Not Enough Target Drive Space Not Enough	When source capacity is small than target	Copy, Compare
5	X Space Not Enough Target Drive Fail!	When source capacity is small than target	Async Copy, Async Compare
6	PreScan Fail	Lose SATA connection during copy or bad sector on HDD	PreScan Source
7	Source Drive Read Fail!	Lose target SATA connection on source port during copy or bad sector on source HDD	Copy, Async Copy, Compare
8	Target Drive Write Fail!	Lose target SATA connection on target port during copy	Copy
9	Target Drive Read Fail!	Lose target SATA connection on target port during comparing	Compare
10	Target Drive Fail	Lose target SATA connection on target port during async comparing	Async Copy, Async Compare
11	Target Drive Not Exist!	No HDD exist during operating	Overwrite
12	One pass One pass failed	Lose SATA connection on SATA port during Overwrite	Overwrite
13	3 pass pass 1 failed	Lose SATA connection on SATA port during Overwrite	Overwrite
14	7 pass 5220.22-M pass 1 failed	Lose SATA connection on SATA port during Overwrite	Overwrite

If you hear the warning signal while the copying function is executing (a beep every 5 seconds), the LCD screen will display the problem status; you may press any button to return to the copy progress screen.

Firmware Update Procedure

(Requires one hard drive containing the rmware le):

1. Create a 50MB HDD partition with FAT/FAT32 or NTFS les system on any SATA hard drive
2. Download the rmware and unzip the le to .BIN le format
3. Copy the .BIN le onto the 50 MB partition of the HDD
4. Insert this drive to the Source slot of the duplicator. For subsystem, connect the drive to the Source SATA port
5. Select "Firmware Update" function under the "Setup" or "Advanced Setup" menu and press ENT to do the update. To access the "Advanced Setup", hold onto the ESC button for 5 seconds. The new option will appear
6. Once completed, it will reboot and show you the new rmware version

Notes:

SECURE ERASE - HDD duplicator sends a WIPE
command to the hard drive. This command lls 00 string to entire HDD

OVERWRITE - There are three options: One pass, 3 passes and 7 passes 5220.22-M. The duplicator writes a string of pattern over the entire disk one time, three times or seven times. (5220.22-M is the DoD standard for drive sanitization)

Please note that some drives may become locked and cannot be initialized after the SECURE ERASE or OVERWRITE. Should this happen, use the following procedures to unlock the drive:

1. Place drive in the source slot
2. Execute "PreScan" function for 1 minute
3. Press "ESC" key until you see "User Abort" on the LCD screen
4. Now remove the drive from the duplicator and connect it to your system, the HDD should be recognized and be able to initialize again

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